Volume 3
1986

LIST OF CONTENTS
AND
AUTHOR INDEX

L.
86

TELEMATICS and INFORMATICS

An International Journal

Editor-in-Chief:
INDU B. SINGH
Associate Editor:
JAY LIEBOWITZ

PERGAMON PRESS New York / Oxford / Toronto / Paris / Frankfurt / Sydney

TELEMATICS and INFORMATICS
An International Journal

Featuring articles about
- Applied telecommunications and information technology
- Information resource management
- Socio-economic implication
- International issues in communication
- Information policy and legislation

Editorial Office: Editor-in-Chief, *Telematics and Informatics*, Pyramid Video, Inc., 480 National Press Bldg., Washington DC 20045.
Telephone: (202) 783-5030.

Publishing, Subscription and Advertising Offices: Pergamon Journals Inc., Fairview Park, Elmsford NY 10523, USA; and Pergamon Journals Ltd., Headington Hill Hall, Oxford OX3 0BW, England.

Published Quarterly: Annual institutional subscription rate (1987): DM360.00; Two-year rate (1987/88): DM684.00. Professional subscription rate (1987): DM186.00. Prices are subject to change without notice. Notify 8 weeks in advance of address change with a copy of subscription mailing label. Microform subscription information available upon request.
Copyright © 1987 Pergamon Journals Ltd.

It is a condition of publication that manuscripts submitted to this journal have not been published and will not be simultaneously submitted or published elsewhere. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature and translations. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise, without permission in writing from the copyright holder.

Photocopying information for users in the U.S.A. The Item-Fee Code for this publication indicates that authorization to photocopy items for internal or personal use is granted by the copyright holder for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service provided the stated fee for copying, beyond that permitted by Section 107 or 108 of the United States Copyright Law, is paid. The appropriate remittance of $3.00 per copy per article is paid directly to the Copyright Clearance Center Inc., 27 Congress Street, Salem, MA 01970.

Permission for other use. The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for copying. Please contact the Subsidiary Rights Manager, Publishing Services Dept. at either Pergamon Journals Ltd. or Pergamon Journals Inc.

The Item-Fee Code for this publication is:
0736-5853/86 $3.00

EDITOR
Indu B. Singh, Ph.D., *President, Pyramid Video, Inc. 480 National Press Bldg., Washington DC 20045*

LEGISLATIVE AND POLICY FOCUS EDITORS
Robert E. Weigend, Senior Editor
Chwat/Weigend Associates, 400 First Street, NW, Suite 816, Washington DC 20001

Janet Zeide, Esquire
Washington DC

EDITORIAL ADVISORY BOARD

Jerry Armes
Spectrum Planning, Inc., Richardson TX

Henry Baumann
National Association of Broadcasters Washington DC

Bertram C. Blevis
Canadian Dept. of Communication, Ottawa, Canada

Clifford Block
US Agency for International Development, Washington DC

Edward J. Bloustein
Rutgers University, New Brunswick NJ

Castelo Branco
Ministry of Communication, Brasilia, Brazil

John H. Carson
George Washington University, Washington DC

N.L. Chowla
Indian Institute of Mass Communication, New Delhi, India

Keith Clarke
British TELECOM Research Laboratories, Ipswich, England

Richard Colino
INTELSAT, Washington DC

Raymond Crowell
COMSAT, Washington DC

Stephen Doyle
Aerojet Techsystems Company, Sacramento CA

Hendrick Edelman
Rutgers University, New Brunswick NJ

John Eger
CBS Broadcast Group, New York NY

Ernest H. Forman
George Washington University, Washington DC

David Golden
Telesat Canada, Ottawa, Canada

S. Hanell
European Space Agency, Paris, France

Carol-Lee Hilewick
Washington DC

Harold Kimball
NASA, Washington DC

ASSOCIATE EDITOR
Jay Liebowitz, D.Sc., *Assistant Professor, Dept. of Management Science, School of Government and Business Administration, George Washington University, Washington DC 20052*

LITERATURE REVIEW EDITOR
Janice Hanson, Ph.D., *Assistant Professor, Department of Communications Studies, The University of Massachusetts, 407 Machmer Hall, Amherst MA 01003*

ASSISTANT EDITOR
Michelle Didier

Toshio Kosuge
University of Electro-Communication, Tokyo, Japan

Erwin G. Krasnow
Verner, Liipfert, Bernhard, McPherson & Alexander, Washington DC

S. Kurilov
Intersputnik, Moscow, USSR

Harold Liebowitz
George Washington University, Washington DC

Richard Marsten
National Research Council, Washington DC

Miles Martin
State University of New York, Plattsburgh NY

James Harvey May
University of California/Chico Chico CA

Karl-Heinz Neumann
Deutsche Bundespost, Bad Honnef, FR Germany

Joseph Pelton
INTELSAT, Washington DC

Louis Pollack
Washington DC

Louis Pouzin
CNET, Paris, France

Louis Rader
University of Virginia, Waynesboro VA

Sayed Rahim
East-West Communication Institute, Honolulu HI

David Sachsman
Rutgers University, New Brunswick NJ

Delbert D. Smith
Schnader, Harrison, Segal & Lewis, Washington DC

Anthony Smith
British Film Institute, London, England

Christopher H. Sterling
George Washington University, Washington DC

Yasumasa Tanaka
Gakushuin University, Tokyo, Japan

Gabriel Tedros
PANAFTEL Project, Addis Ababa, Ethiopia

VO
3
19

TELEMATICS and INFORMATICS
An International Journal

LIST OF CONTENTS

Volume 3, Number 1 1986

CONTENTS

Feature Articles

Indu B. Singh
Jay Liebowitz 1 Editorial: From Infancy to Adulthood

T. H. Chowdary 3 Indian Telephones: Troubled by Under Investment

Tri T. Ha 11 Circuit Switched Demand Assignment Multiple Access

Daniel A. DeSalvo
Jay Liebowitz 25 The Application of an Expert System for Information Retrieval at the National Archives

Vishwa M. Mishra 39 Managing Academia in the Information Age

Jay Liebowitz 47 Development of an Expert System Prototype for Determining Software Functional Requirements for Command Management Activities at NASA Goddard

Legislative and Policy Focus

Richard M. Firestone 81 Technology Interview

Technical Reports

85 NTIS Section

V ***PatSearch Section***

Volume 3, Number 2 1986

CONTENTS

SPECIAL ISSUE

LOCAL AREA NETWORKS

Daniel A. DeSalvo	91	Guest Editor's Note
Daniel A. DeSalvo	93	An Interview on Local Area Networks with Dr. Frank Burke Acting Archivist of the United States
Gary Chou	101	Federal Government Local Area Networking Issues
Robert J. Lambird **Robert F. Clark** **C. Thomas DiNenna**	107	Experiences with Local Area Networks at the U.S. Bureau of the Census
Eric H. Killorin **Paula J. Musich**	121	IBM's Grand Scheme
Eric H. Killorin **Paula J. Musich**	127	A User's Guide for Evaluating the IBM Token Ring
Wayne H. Russell	133	Trends in Network Media and Wiring Strategies: LAN Life Cycle Cost Implications
Donna Jeker	141	A Relational Database Management System in a Network—A Model
Michelle Didier	151	NTIS Section
	V	PatSearch Section

Volume 3, Number 3 1986

CONTENTS

SPECIAL ISSUE

ARTIFICIAL INTELLIGENCE APPLICATIONS AT NASA

Patricia Lightfoot	157	Guest Editor's Note
Patricia Lightfoot	159	AI Challenges For Spacecraft Control Programs
David R. McLean	165	The Design and Application of a Transportable Inference Engine (TIE1)
William J. Campbell **Larry H. Roelofs**	177	The Development of an Intelligent User Interface for NASA's Scientific Databases
W. B. Dress	191	AI Goes FORTH
James Rash	199	A Prototype Expert System in OPS5 for Data Error Detection
Terry B. Bollinger	211	Multiperspective Analysis and Testing of Expert Systems
		Legislative and Policy Focus
Michael R. Gardner	217	Reaching Out to Developing Countries: The U.S. Telecommunications Training Institute
		Literature Review
Jarice Hanson **Stuart S. Kressel**	221	Artificial Intelligence
		Technical Reports
	225	NTIS Section
	V	***PatSearch Section***

Volume 3, Number 4 1986

CONTENTS

SPECIAL ISSUE

EXPERT SYSTEMS AND EXPERT SUPPORT SYSTEMS

Ernest H. Forman **Thomas J. Nagy**	227	Guest Editors' Note
Ernest H. Forman	229	In Search of the "Right" Model
Bruce I. Blum **Ralph F. Wachter**	237	Expert System Applications in Software Engineering
Jay Liebowitz	263	Expert Systems in Law: A Survey and Case Study
Curtis R. Cook	273	Expert Support Systems for Competitive Procurement
Mathew J. Liberatore	289	R & D Project Selection
		Legislative and Policy Focus
Robert F. Weigend **Janet Zeide**	301	Partial Listing of Firms Doing Artificial Intelligence/Expert Systems Work
		Literature Review Section
Jarice Hanson	303	Artificial Intelligence
		Technical Reports
	307	NTIS Section
	I	***Software Survey Section***
	V	***List of Contents and Author Index Volume 3, 1986***

Author Index

Blum, B. I., 237
Bollinger, T. B., 211

Campbell, W. J., 177
Chou, G., 101
Chowdary, T. H., 3
Clark, R. F., 107
Cook, C. R., 273

DeSalvo, D. A., 25, 91, 93
DiNenna, C. T., 107
Didier, M., 151
Dress, W. B., 191

Firestone, R. M., 85
Forman, E. H., 227, 229

Gardner, M. R., 217

Ha, T. T., 11
Hanson, J., 221, 303

Jeker, D., 141

Killorin, E. H., 121
Kressel, S. S., 221

Lambird, R. J., 107
Liberatore, M. J., 289
Liebowitz, J., 1, 3, 25, 47, 263
Lightfoot, P., 157, 159

McLean, D. R., 165
Mishra, V. M., 39
Musich, P. J., 127

Rash, J., 199
Roelofs, L. H., 177
Russell, W. H., 133

Singh, I. B., 1

Wachter, R. F., 237

L.
86